

**REMARKS**

The claims were amended to overcome the rejection under 35 USC 112, second paragraph, as being indefinite. This included amending Claims 5 and 14 to recite “laser diode” instead of “liquid crystal display”. Applicants respectfully submit that the support for the “laser diode” is found at least in page 6, line 20. Also, the recitation of “said first image” in Claim 9 has also been deleted, which the Examiner stated was indefinite. Claims 3 and 12 have been cancelled without prejudice or disclaimer. Further, Claim 1, 7, 9, 10, and 16 have been made to clarify the claimed invention.

Claims 1-4, 7-8, and 10-13 stand rejected under 35 USC 102 as being anticipated by U.S. Patent No. 4,614,432, issued to Kuniyoshi et al. Claims 6 and 15 stand rejected under 35 USC 103 as being unpatentable over Kuniyoshi et al. in view of U.S. Patent No. 5,969,820, issued Yoshii et al. Based on the following, these rejections are respectfully traversed.

In response to the above rejection, it is respectfully submitted that the claims recite features neither taught nor suggested by Kuniyoshi et al. alone or in combination with Yoshii et al. In particular, such features include “...for detecting an image of said light beam received by said workpiece, and for processing a deviation direction and a deviation amount based on the **image of said light beam shifted on the surface of said workpiece**”, as recited in Claim 1. Further, a similar feature is also recited in Claim 1, 7, 10 and 16.

Applicants respectfully submit that the specification at page 7, lines 4-8, describes the alignment of the sample substrate, wherein the sample substrate is adjusted based on the

lateral shifting image of the light beam illuminated within the volume of the sample substrate.

In contrast, Kuniyoshi et al. discloses that the image of a positioning pattern (4') on a wafer (4) and the image of the reticle (2) reference pattern are compared to make the adjustment of the wafer (4) (column 3, lines 31-55). In addition, the wafer (4) is vertically moved depending on the wavelength used image the pattern on the wafer (4) on the reticle (2) (column 4, lines 45-55).

Therefore, it is respectfully submitted that the presently recited "...for detecting an image of said light beam received by said workpiece, and for processing a deviation direction and a deviation amount based on the **image of said light beam shifted on the surface of said workpiece**" is not anticipated by Kuniyoshi et al.

In view of the above-described distinctions, it is respectfully submitted that the invention of Claims 1, 2, 4-11, and 13-16 are not anticipated nor made obvious by Kuniyoshi et al. alone or in combination with Yoshii et al. Accordingly, reconsideration and withdrawal of this ground of rejection are respectfully requested.

The other claims in this application are each dependent from the independent claim discussed above and are therefore believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual consideration of the patentability of each on its own merits is respectfully requested.

Applicants' undersigned attorney may be reached by telephone at the number given below. The Commissioner is hereby authorized to credit any overpayment or charge any

fee (except the issue fee) to Account No. 14-1270.

Respectfully submitted,

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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In re Application of: Michael Joffe

Serial No.: 09/874,420

Group Art Unit: 2878

Filed: June 5, 2001

Examiner: Stephen Yam

Title: SAMPLE POSITIONING METHOD FOR SURFACE OPTICAL DIAGNOSICS  
USING VIDEO IMAGING

**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**IN THE CLAIMS:**

Please amend the claims as follows:

1.(AMENDED) A positioning system for use in adjusting the position of a workpiece, comprising:

a light source for directing a light beam onto the top surface of said workpiece; and,

a detector coupled to said light transmitter for detecting an image of said [the] light beam received by said workpiece, and for processing a deviation direction and a deviation amount based on [a positional relationship between an] the image of said light beam [received] shifted on the surface of said workpiece [and a predetermined reference image].

5.(AMENDED) The system of claim 1, wherein said light source comprises a [liquid crystal display] laser diode.

7.(AMENDED) A method for adjusting the vertical position of a workpiece, said method comprising the steps of:

transmitting a light beam onto the top surface of said workpiece at a predetermined angle relative to a normal axis associated with said workpiece;

detecting the light beam projected on the top surface of said workpiece;

[determining a center point of said detected light beam;]

~~detecting~~ [determining] a lateral shift [distance between the center point of] of said detected light beam on the top surface of said work piece [and a predetermined reference point]; and,

converting said [determined] ~~detected~~ lateral shift [distance] to a corresponding vertical distance using trigonometry[;].

9.(AMENDED) The method of claim 7, wherein the step of [determining the center point of] ~~detecting~~ said detected light beam further comprises the steps of:

monitoring a boundary of said [first image] detected light beam;

generating signals representing positions of said boundary; and,

evaluating said signals for determining [the] ~~a~~ center point of said boundary.

10. (AMENDED) A positioning system for use in adjusting the position of a workpiece, comprising:

a light generating means for projecting a light beam onto the top surface of said workpiece at a predetermined angle;

a video capturing means for detecting the light beam received [by] on said workpiece and for converting [the] said detected light beam into electrical signals; and,

a computer means for processing a deviation direction and a deviation amount based on [a positional relationship between a digital image of] said [projected] detected light beam shifted on the surface of said workpiece [and a predetermined reference image].

13. (AMENDED) The system of claim 10, wherein said computer means determines a lateral shift direction and an amount of lateral displacement of said projected light beam within the surface of said workpiece.

14.(AMENDED) The system of claim 10, wherein said light generating means comprises a [liquid crystal display] laser diode.